

Fig. 1

FIG. 2

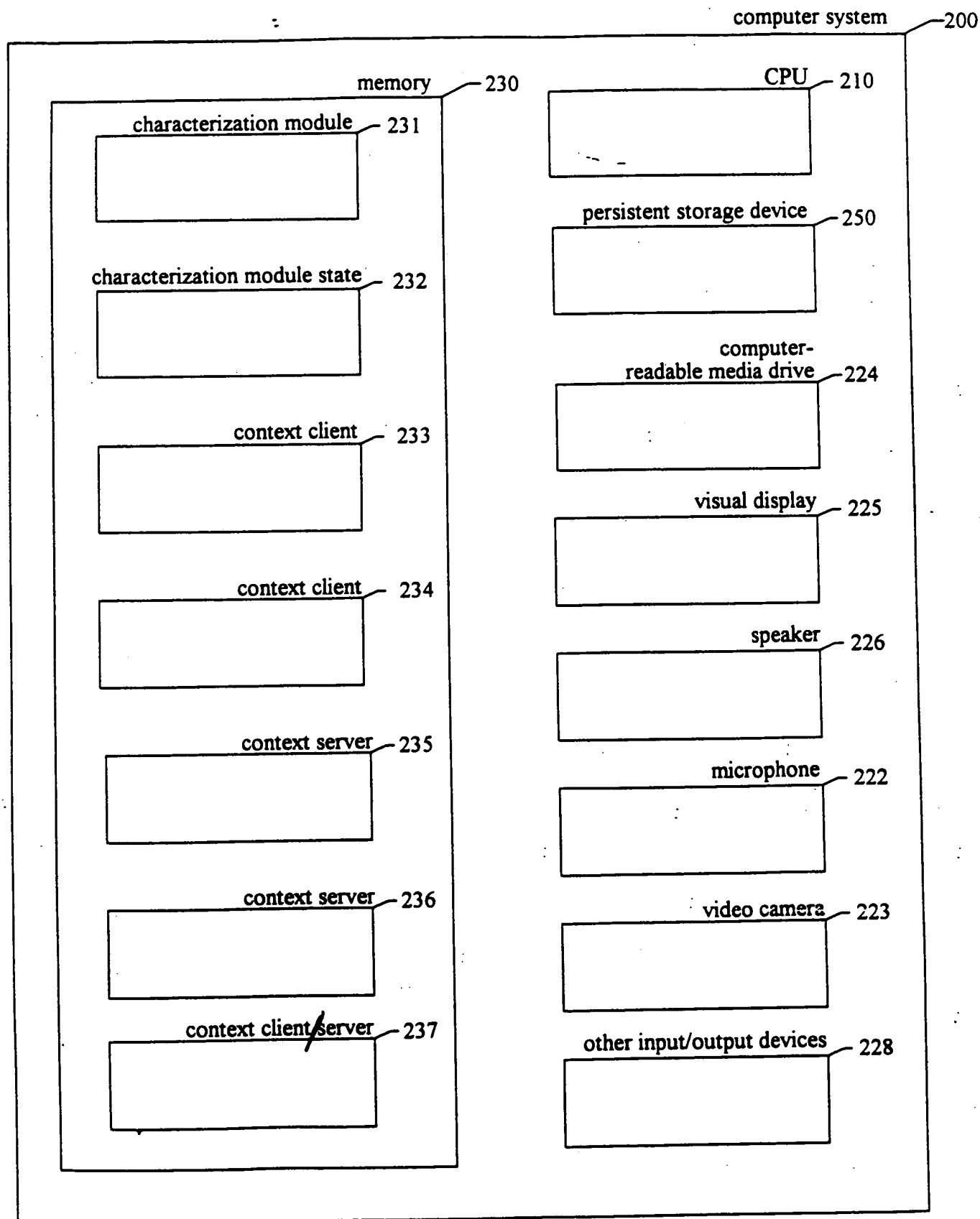


Fig. 2

310 320

CONTEXT
SERVER
(GPS)

user
location
attribute

user
location
attribute

user
elevation
attribute

user
in-region
attribute

CHARACTERIZATION MODULE

CONTEXT
CLIENT
SERVER

user
location
attribute

user
in-region
attribute

user
elevation
attribute

user
location
attribute

CONTEXT
CLIENT
(distance-
from-home)

CONTEXT
CLIENT
(location-
map)

340

350

FIG. 3

T0750-00000000

context server table

context server name	version	installation date	filename	request handler
gps	1	2/10/2000	gps.exe	(reference)
ips	1	2/21/2000	ips.exe	(reference)
location_region_analysis	1	2/10/2000	l r a.exe	(reference)

FIG 4

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° 09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° 021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	0

FIG 5

TOTTSD" 6264260

-600

context client table

context client name		message handler
location_map	(reference)	
distance from home	(reference)	
region_analysis	(reference)	

-611

FIG 6

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° 09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° 021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	1

L711 L712 L713 L714 L715 L716 L717
 FIG 7

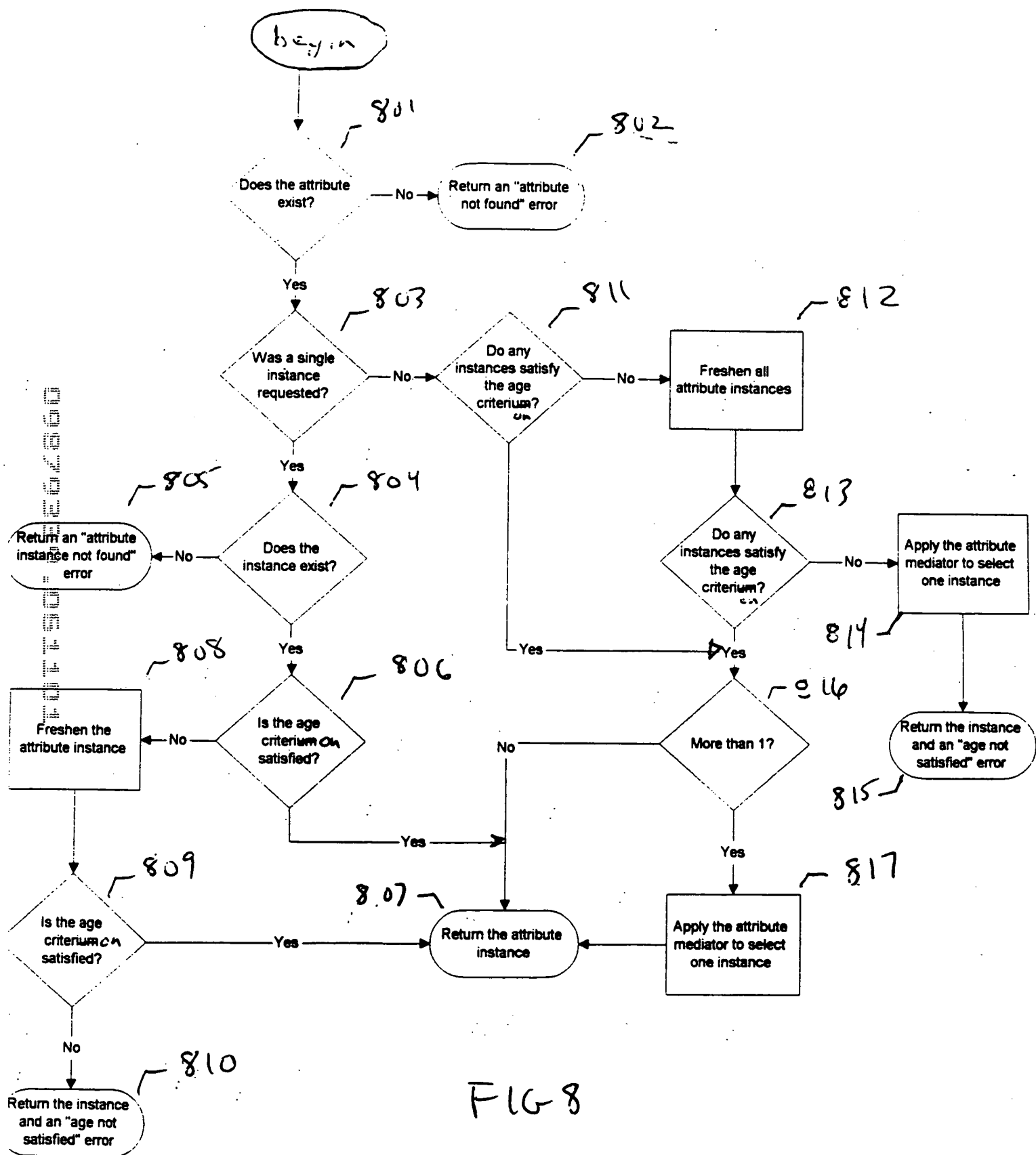


FIG 8

900

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
user.in region	region analysis	none	none	none	none	1

901
902
903
904

L 911 L 912 L 913 L 914 L 915 L 916 L 917

FIG 9

1000

condition table

condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
in region true	region analysis	user.in region	none	TRUE	=

1001

L 1011 L 1012 L 1013 L 1014 L 1015 L 1016

FIG 10

T07F50 6666660

condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundaries_crossed	region_analysiss	in_region_true	TRUE or FALSE	30	13:11:29.101 2/22/2000	(reference)	no

1101

1118

FIG 11

condition monitor table

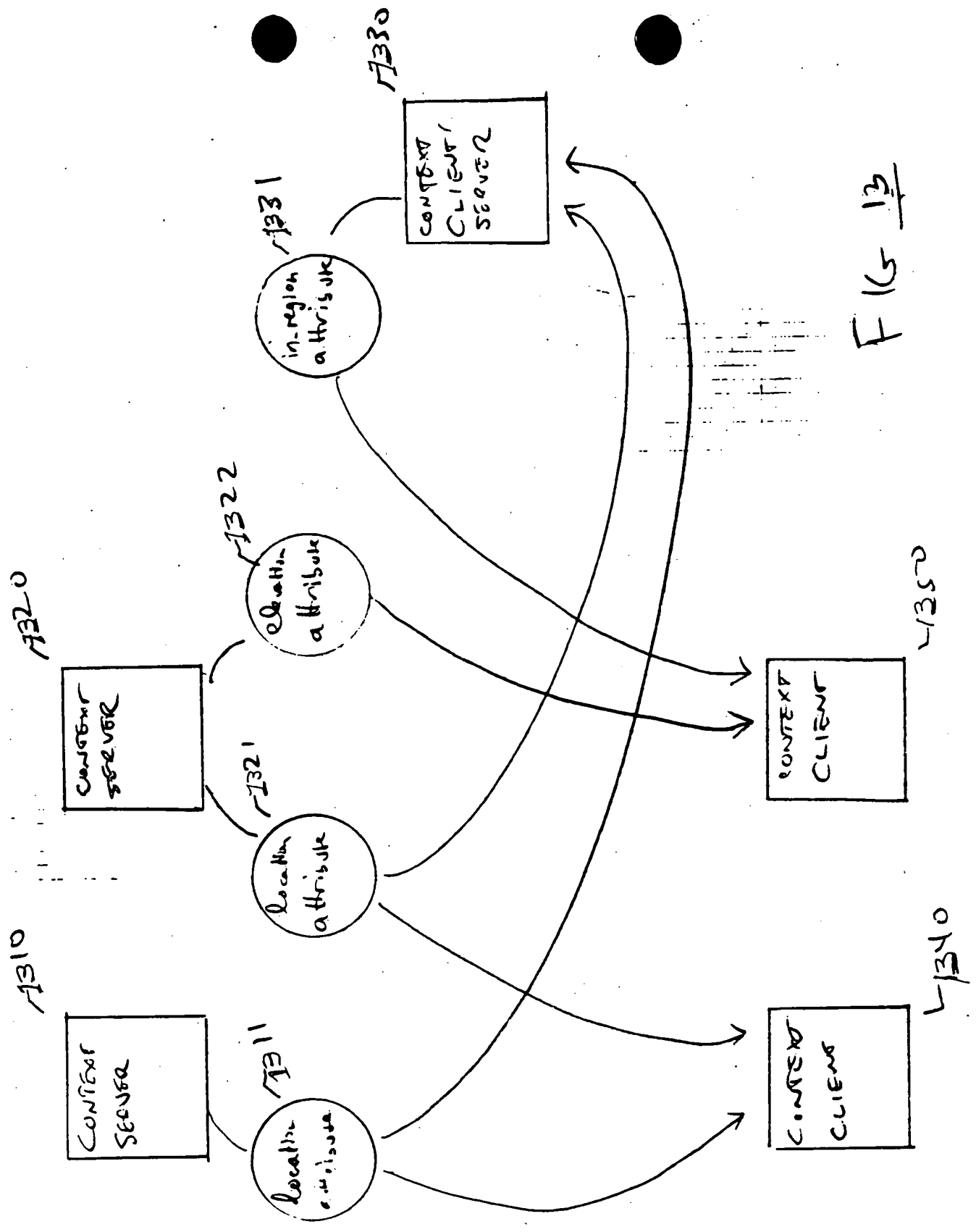
condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundaries_crossed	region_analysiss	in_region_true	TRUE or FALSE	30	13:11:59.101 2/22/2000	(reference)	yes

1201

1218

FIG 12

FIG. 13



attribute request table

attribute name	context client name
user.location	distance_from_home
user.in_region	location_map
user.location [gps]	location_region_analysis
user.elevation	location_map

Figure 14

[illegible]

[illegible]

Person.<name or ID>. (same as User.)

Fig. 15

Fig. 15

- CPU.
 - Load
 - Speed
- Memory.
 - Total_capacity
 - Used
- Storage.
 - Total_capacity
 - Used
- Connectivity.
 - Connection_status
 - Connection_speed
 - Connection_type/device
 - Connection_activity
- Power.
 - Power_source
 - Power_level
- Environment.
 - People.
 - Nearest
 - Number_present
 - Number_close
 - Local.
 - Time
 - Date
 - Temperature
 - Pressure
 - Wind_speed
 - Wind_direction
 - Absolute_humidity
 - High_forecast_temperature
 - Low_forecast_temperature
 - People_present
 - Ambient_noise_level
 - Ambient_light_level
 - Days.<previous or future>.
 - High_temperature
 - Low_temperature
 - Precipitation_type
 - Precipitation_amount
 - Place.<place name>. (same as Environment.Local)
- Application.
 - Mail.
 - Available
 - New_messages_waiting
 - Messages_waiting_to_be_sent
 - Phone.
 - Available
 - In_use
 - On/off
 - Notification_mechanism
 - Call_incoming
 - Caller_ID
 - Sound_recorder.
 - Available
 - Recording

1) User Setting

a) Mental Context

- i) Meaning
- ii) Cognition
 - (1) Divided User Attention
 - (2) Task Switching
 - (3) Background Awareness

iii) Solitude

iv) Privacy

- (1) Desired Privacy
- (2) Perceived Privacy

v) Social Context

vi) Affect

b) Physical Situation

i) Body

- (1) Biometrics
- (2) Posture
- (3) Motion
- (4) Physical Encumbrment

(a) Senses

- (i) Eyes
- (ii) Ears
- (iii) Tactile
- (iv) Hands
- (v) Nose
- (vi) Tongue

(b) Workload demands/effects

(c) Interaction with computer devices

(d) Interaction with people

(e) Physical Health

ii) Environment

- (1) Time/Space
- (2) Objects
- (3) Persons

(a) Audience/Privacy Availability

- (i) Scope of Disclosure
- (ii) Hardware affinity for privacy
- (iii) Privacy Indicator for User
- (iv) Privacy Indicator for Public
- (v) Watching Indicator
- (vi) Being Observed Indicator

(4) Ambient Interference

- (a) Visual
- (b) Audio
- (c) Tactile

2) Computer

a) Power

b) Configuration

i) User Input Systems

- (1) Hand/Haptic
 - (a) Keyboard/Keystrokes
- (2) Voice/Audio
- (3) Eye Tracking
- (4) Cursors
 - (a) Axis
 - (b) Resolution
 - (i) Selection
 - (ii) Invocation
 - (c) Accelerators

ii) Output Systems

- (1) Visual
 - (a) Resolution
- (2) Audio
 - (a) Public/Private
- (3) Haptic

iii) External Resources

- (1) I/O devices
- (2) Connectivity

c) Data

i) Quantity/State

ii) Urgency/Importance

- (1) Use of Prominence

iii) Modality

iv) Sensitivity/Purpose

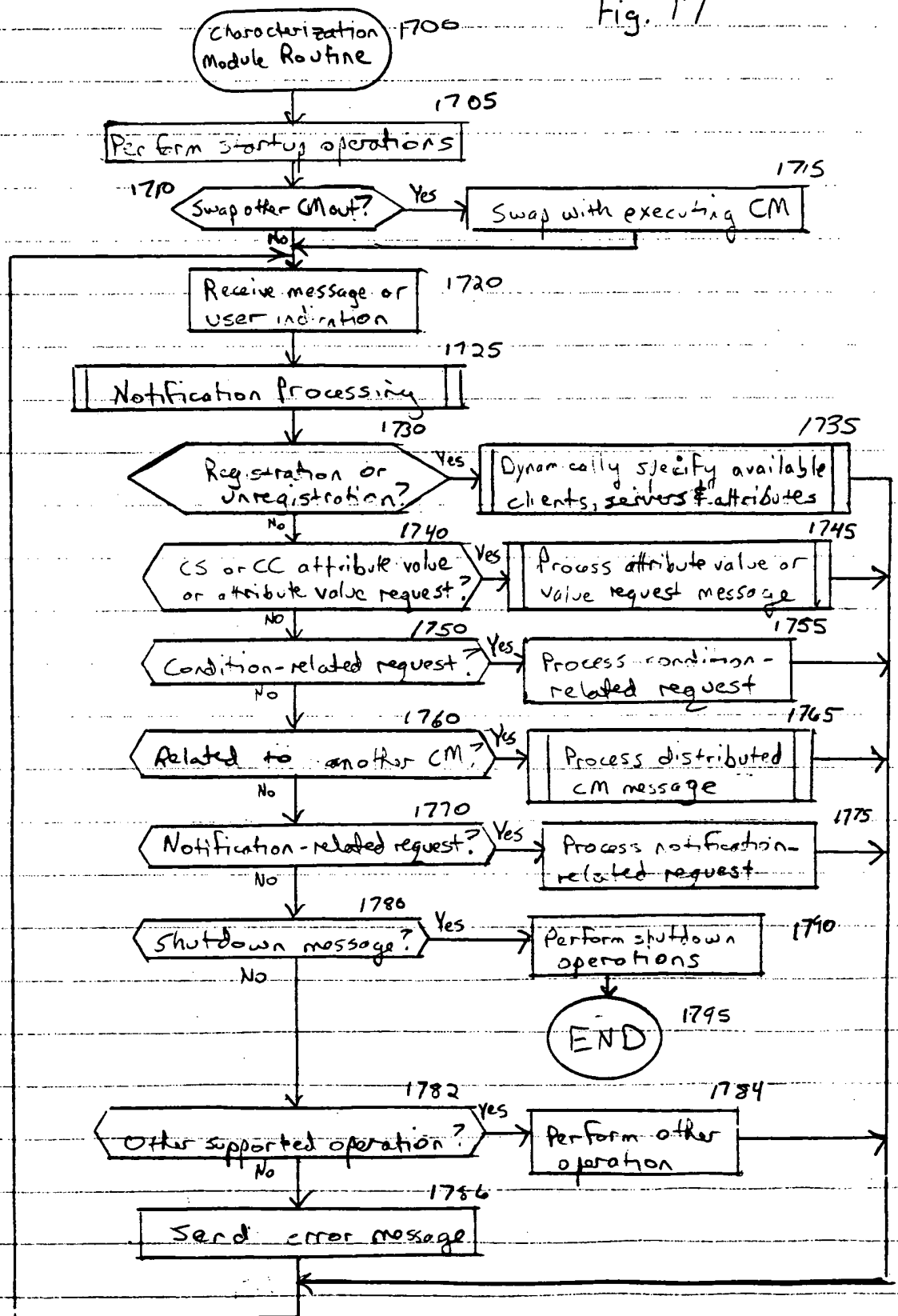
- (1) Privacy Issues
- (2) Use of Association
- (3) Use of Safety

v) Source/Ownership

- (1) Types
 - (a) User generated
 - (b) Other computers or people
 - (c) Sensor
 - (d) PC State
- (2) Use of Association

Fig. 16

Fig. 17



Notification
Processing
Subroutine

1725

Fig. 18

Receive indication of received
message or user indication

1805

Compare received message or
user indication to the stored
active notification requests

1810

Retrieve additional information if
needed to determine if any stored
active notification requests
are satisfied

1815

Satisfied notification requests?

1820
No

Yes

Select next request

1825

Send notification to supplier of the request
that it was satisfied

1830

Remove
request

1840

Remove notification request?

1835

Yes

No

Deactivate
request

1850

Deactivate notification request?

1845

Yes

No

More?

Yes

1855

No

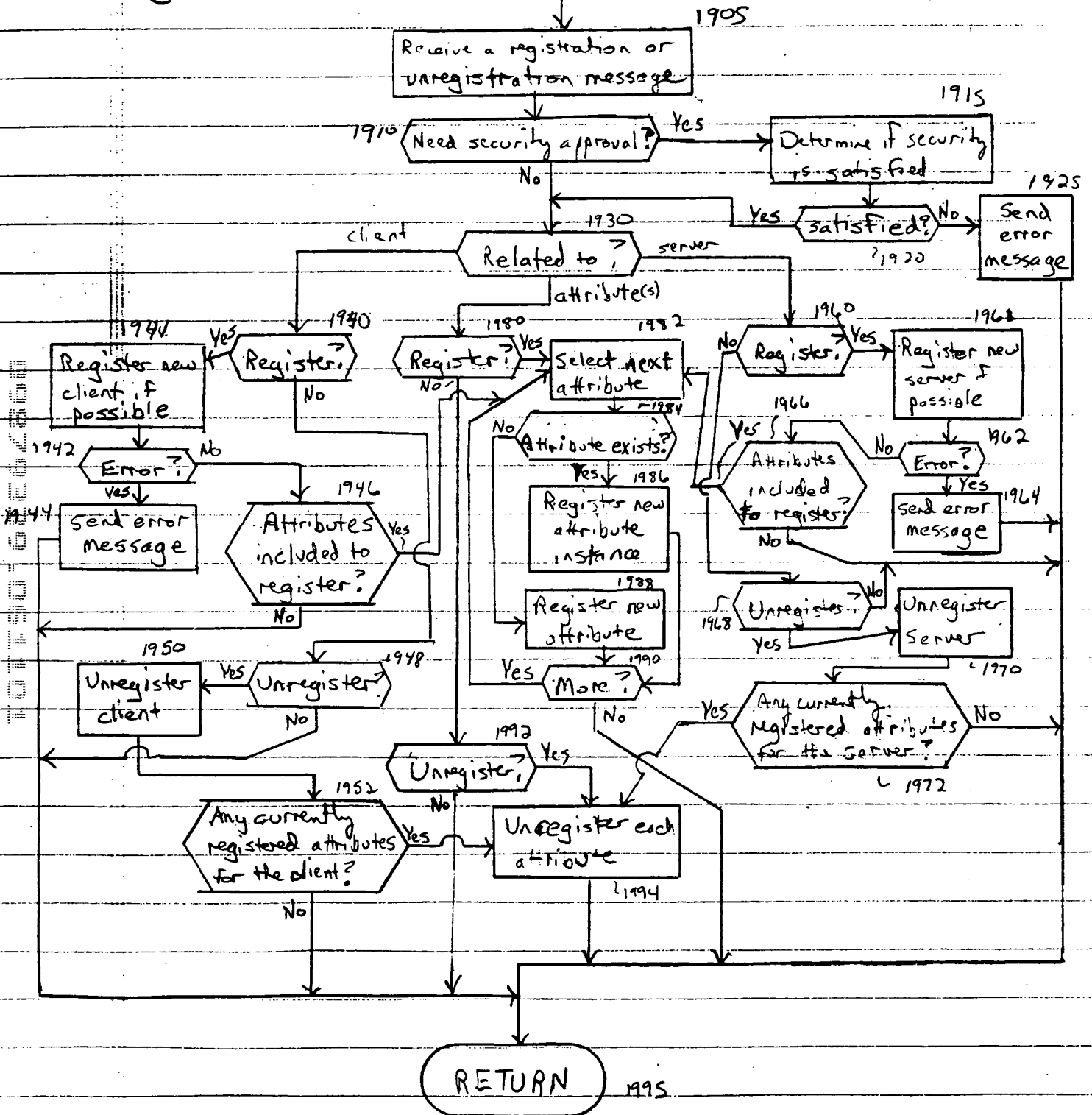
RETURN

1895

2025-06-26 06:00

Fig. 19

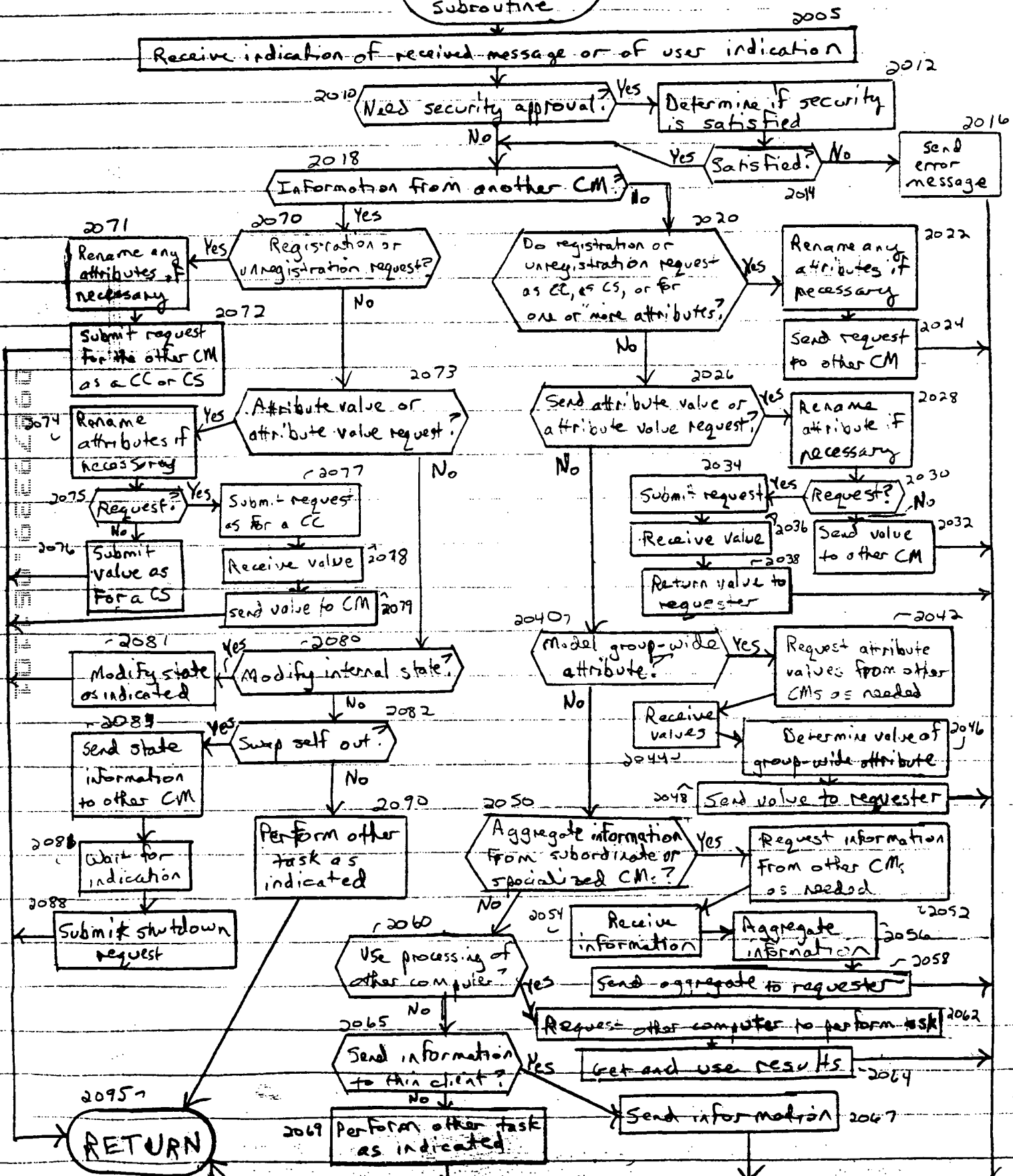
Dynamically Specify Available
clients, servers, & Attributes
Subroutine 1735



Process Distributed CM Message Subroutine

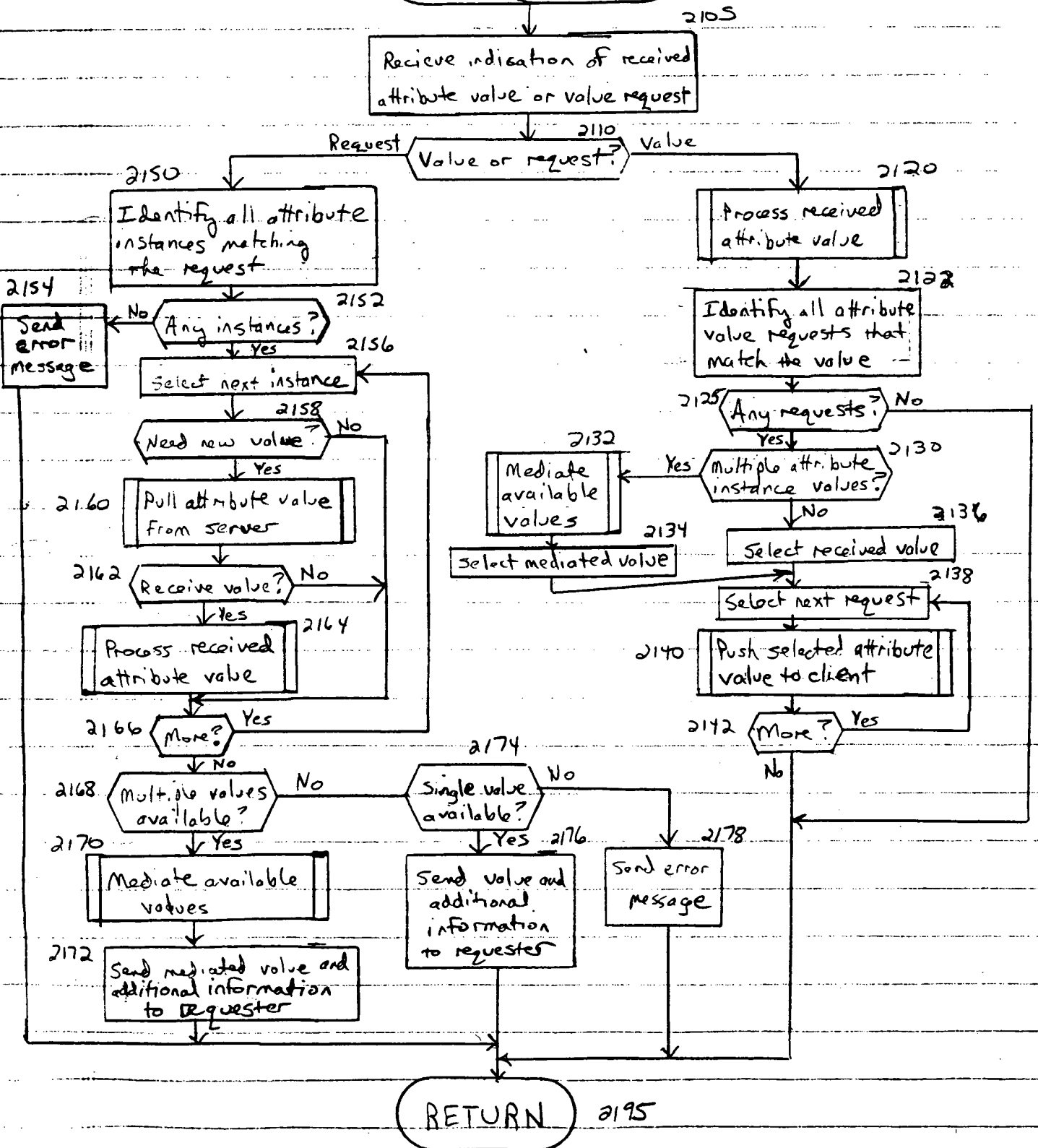
1765

Fig. 20



1745
Process Attribute Value
or Value Request Message
Subroutine

Fig. 21



2200 Fig 22

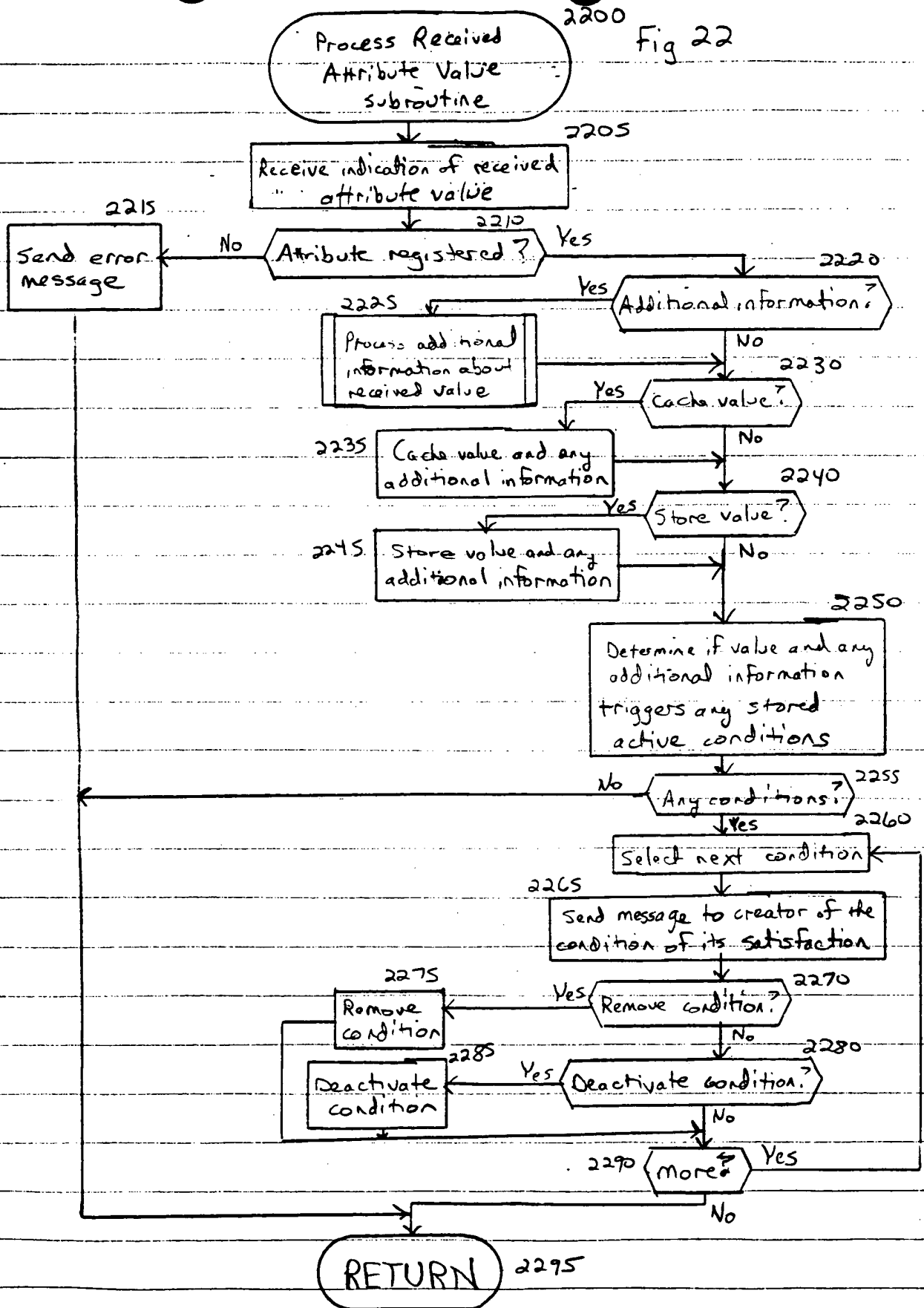


Fig. 23

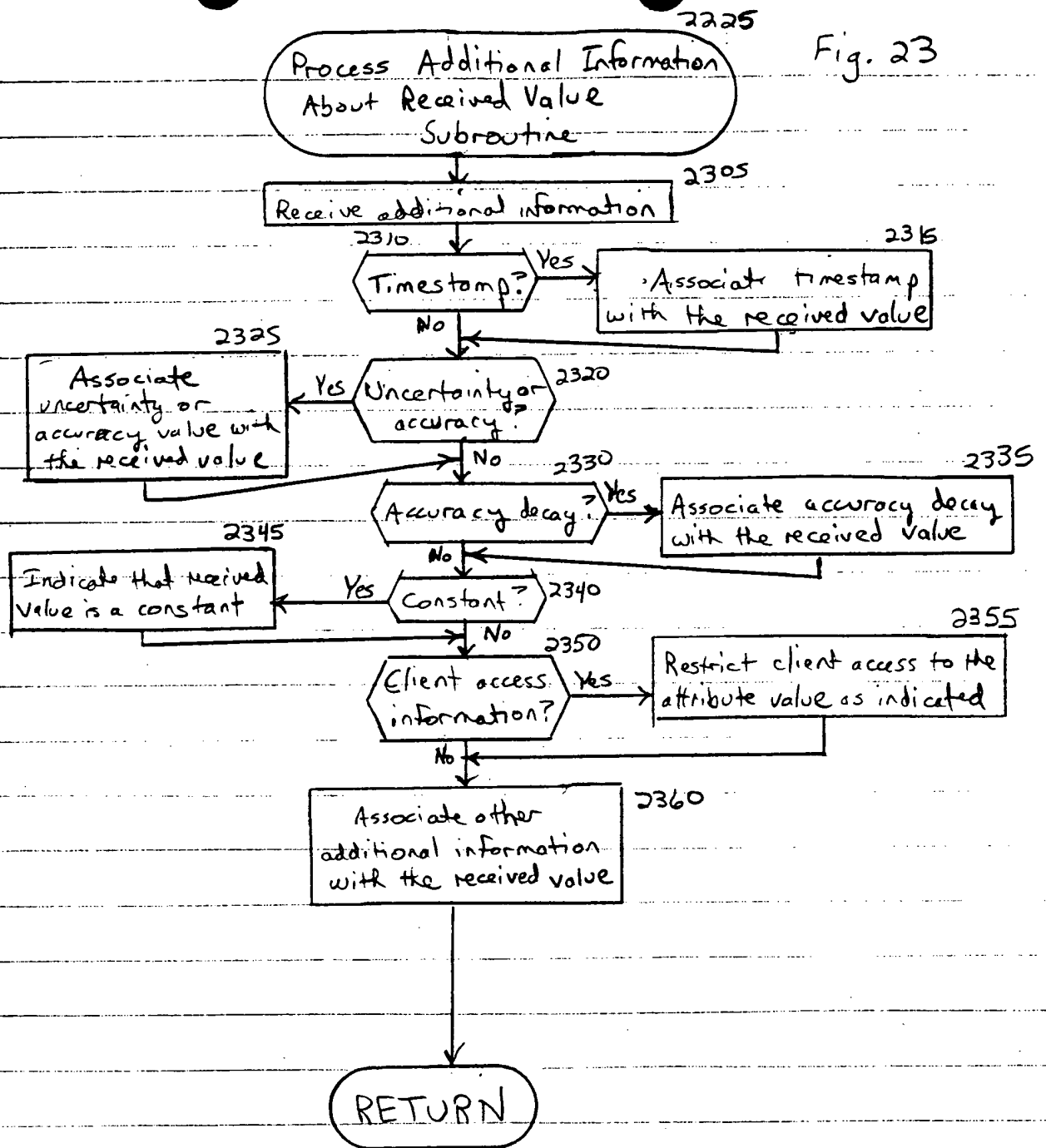


Fig. 24

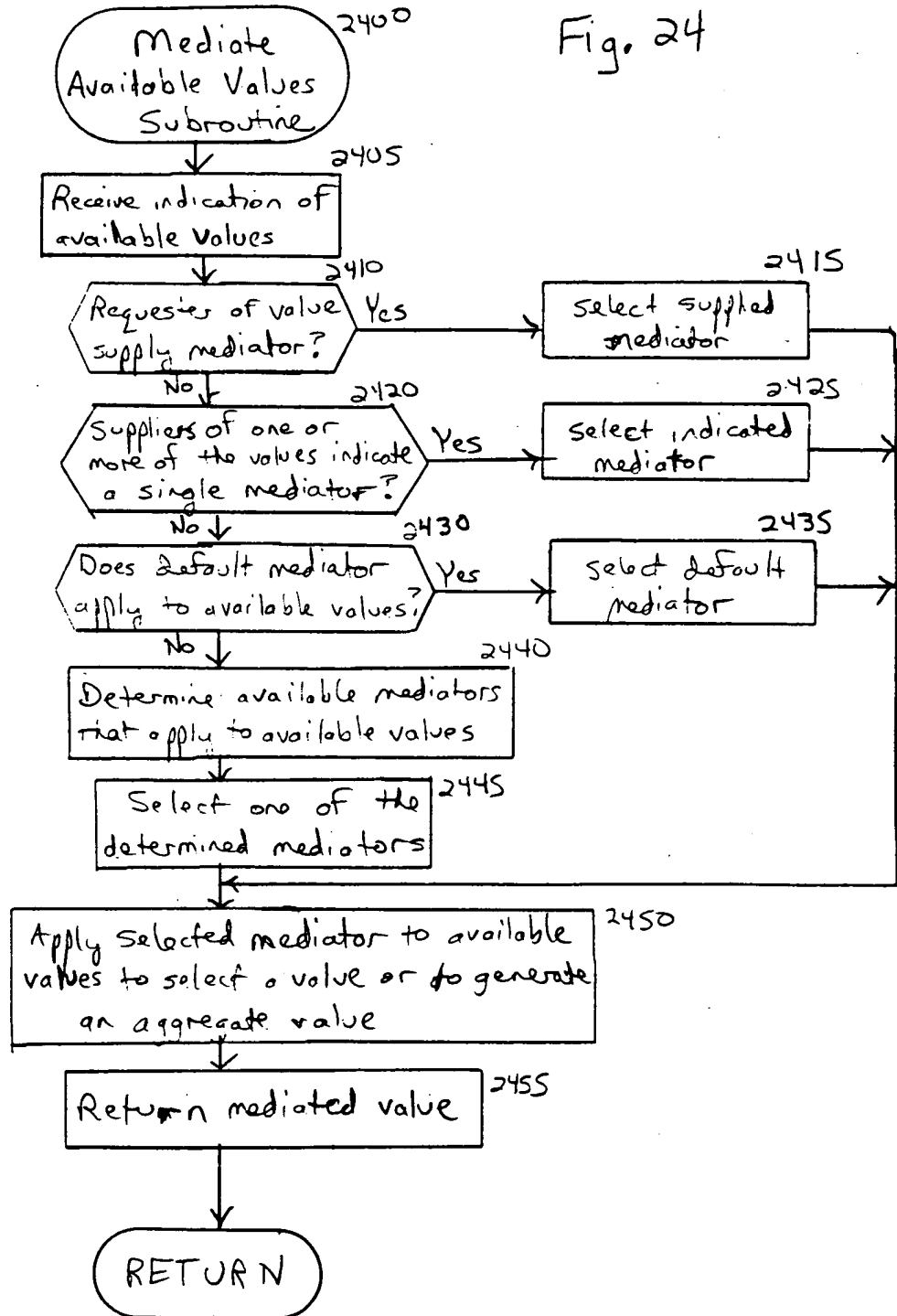
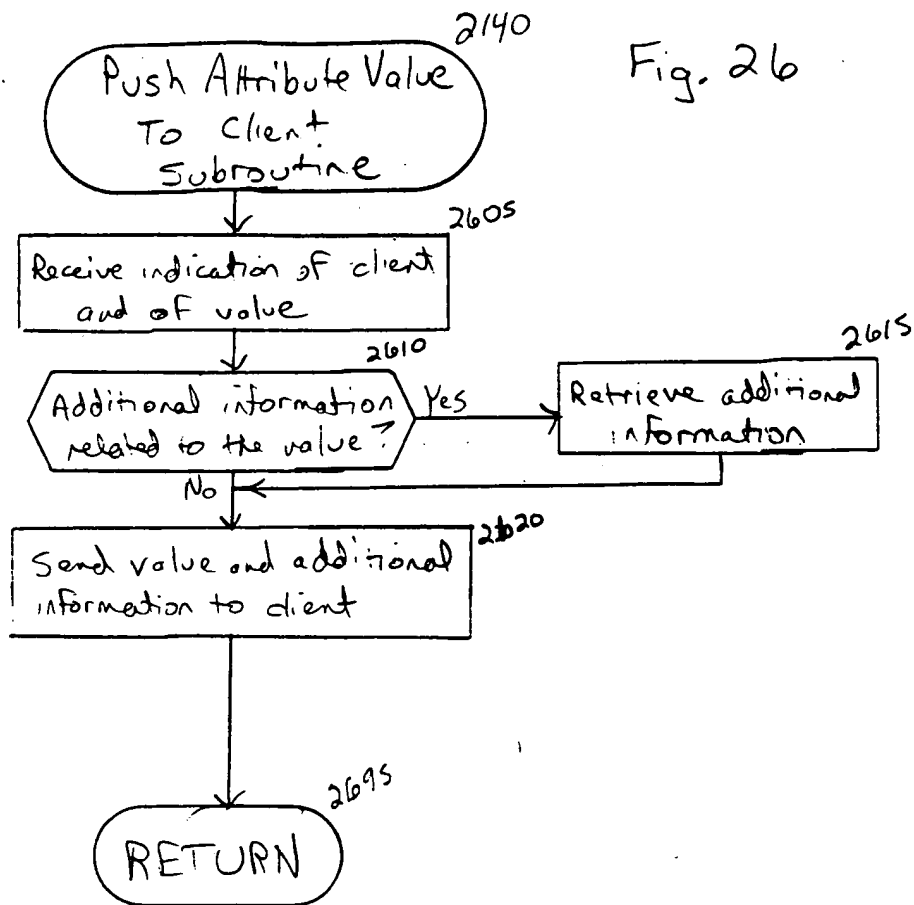
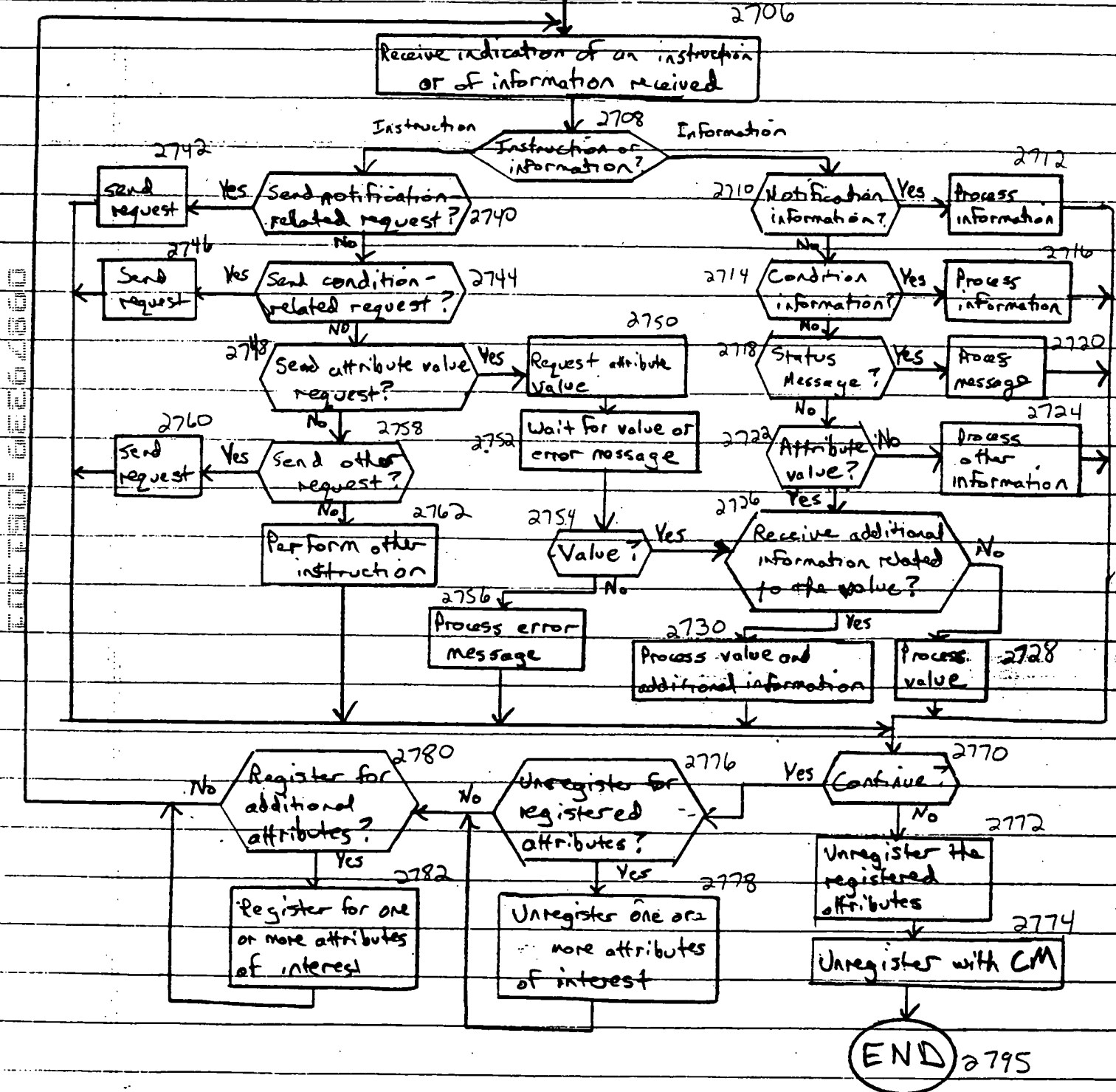


Fig. 26

[illegible]

Context Client Routine 2700

Fig. 27



Context Server Routine 2800

Fig. 28

